

**IN THE CLAIMS**

Please delete all prior lists of claims in the application and insert the following list of claims:

1. ~~[CANCELED] A diagnostic test for spongiform encephalopathy and other demyelinating conditions in mammals which comprises assaying antibodies present in the mammal which bind to an antigenic peptide which exhibits molecular mimicry of a mammalian myelin peptide.~~
2. ~~[CANCELED] A test according to Claim 1, in which the mammalian myelin peptide has the sequence FSWGAEGQK.~~
3. ~~[CANCELED] A test according to Claim 1 or 2, for BSE in cattle.~~
4. ~~[CANCELED] A test according to Claim 3, using as the test antigen whole bacteria of an Acinetobacter, Agrobacterium, or Ruminococcus species.~~
5. ~~[CANCELED] A test according to Claim 4, using bacteria of the species Acinetobacter calcoaceticus, Agrobacterium tumefaciens, or Ruminococcus albus.~~
6. ~~[CANCELED] A test according to Claim 3, using as the test antigen a peptide derived from bacteria specified in Claim 4 or 5.~~
7. ~~[CANCELED] A test according to Claim 6, using a peptide of sequence ISRFAWGEV, YTRFTWGAP, or YTQFEISAE.~~
8. ~~[CANCELED] A test according to Claim 6 or 7, in which the peptide used is a synthetic peptide.~~
9. ~~[CANCELED] A method of testing for BSE in cattle which comprises assaying sera collected from the cattle for antibodies to a species of Acinetobacter, Agrobacterium or Ruminococcus, or a peptide having a sequence present in said species~~

~~which mimics a peptide of bovine myelin and identifying animals having a level of antibodies at least about two standard deviations above that of healthy control animals.~~

10. [CANCELED] ~~A method according to claim 9, in which the bovine myelin peptide has the sequence FSWGAEGQK.~~

11. [CANCELED] ~~A diagnostic test kit for BSE in cattle comprising as test antigen a species of Acinetobacter, Agrobacterium or Ruminococcus, or a peptide having a sequence present in said species which mimics a peptide of bovine myelin.~~

12. [CANCELED] ~~A test kit according to claim 11, in which the test antigen is a peptide which mimics the sequence FSWGAEGQK.~~

13. [CURRENTLY AMENDED] A method of diagnosing spongiform encephalopathy in a mammalian subject, including a human subject, the method comprising measuring a bodily fluid of the subject for antibodies capable of binding to a microorganism classified within a genus selected from the group consisting of Acinetobacter, Agrobacter, and Ruminococcus, and wherein the microorganism contains an antigenic peptide that has sufficient sequence homology with a mammalian myelin peptide such that the antibodies capable of binding to the microorganism are cross-reactive with mammalian myelin and demyelinate nervous tissue, wherein an elevated level of the antibodies in the subject as compared to a corresponding level of the antibodies in known unaffected subjects indicates spongiform encephalopathy ~~or multiple sclerosis~~ in the subject.

14. [CANCELED] ~~The method of Claim 13, wherein the mammalian subject is a human, and the method is to diagnose multiple sclerosis.~~

15. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the mammalian subject is a bovine, and the method is to diagnose bovine spongiform encephalopathy.

16. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the bodily fluid measured is serum.
17. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Acinetobacter*.
18. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Agrobacter*.
19. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Ruminococcus*.
20. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism selected from the group consisting of *Acinetobacter calcoaceticus*, *Agrobacter tumefaciens*, and *Ruminococcus albus*.
21. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the antibodies are measured using an enzyme-linked immunosorbent assay.
22. [PREVIOUSLY PRESENTED] The method of Claim 21, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and *Ruminococcus*.
23. [PREVIOUSLY PRESENTED] The method of Claim 21, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria selected from the group consisting of *Acinetobacter calcoaceticus*, *Agrobacter tumefaciens*, and *Ruminococcus albus*.

24. [PREVIOUSLY PRESENTED] The method of Claim 21, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole *Acinetobacter calcoaceticus* bacteria.

25. [PREVIOUSLY PRESENTED] The method of Claim 21, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria wherein the bacteria contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.

26. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the antibodies are measured using an enzyme-linked immunosorbent assay that utilizes as a test antigen a polypeptide selected from the group consisting of SEQ. ID. NOS: 1, 3, 4, and 5.

27. [PREVIOUSLY PRESENTED] The method of Claim 13, wherein the microorganism contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.

28. [PREVIOUSLY PRESENTED] A method of diagnosing spongiform encephalopathy in a bovine subject, the method comprising measuring serum collected from a bovine subject for antibodies capable of binding to a microorganism classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and *Ruminococcus*, and wherein the microorganism contains an antigenic peptide that has sufficient sequence homology with a mammalian myelin peptide such that the antibodies capable of binding to the microorganism are cross-reactive with mammalian myelin and demyelinate nervous tissue, wherein an elevated level of the antibodies in the subject as compared to a corresponding level of the antibodies in known unaffected subjects indicates spongiform encephalopathy in the subject.

29. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Acinetobacter*.
30. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Agrobacter*.
31. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Ruminococcus*.
32. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism selected from the group consisting of *Acinetobacter calcoaceticus*, *Agrobacter tumefaciens*, and *Ruminococcus albus*.
33. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the antibodies are measured using an enzyme-linked immunosorbent assay.
34. [PREVIOUSLY PRESENTED] The method of Claim 33, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and *Ruminococcus*.
35. [PREVIOUSLY PRESENTED] The method of Claim 33, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria selected from the group consisting of *Acinetobacter calcoaceticus*, *Agrobacter tumefaciens*, and *Ruminococcus albus*.

36. [PREVIOUSLY PRESENTED] The method of Claim 33, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole *Acinetobacter calcoaceticus* bacteria.

37. [PREVIOUSLY PRESENTED] The method of Claim 33, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria wherein the bacteria contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.

38. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the antibodies are measured using an enzyme-linked immunosorbent assay that utilizes as a test antigen a polypeptide selected from the group consisting of SEQ. ID. NOS: 1, 3, 4, and 5.

39. [PREVIOUSLY PRESENTED] The method of Claim 28, wherein the microorganism contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.

40. [CANCELED] ~~A method of diagnosing multiple sclerosis in a human subject, the method comprising measuring serum collected from a human subject for antibodies capable of binding to a microorganism classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and *Ruminococcus*, and wherein the microorganism contains an antigenic peptide that has sufficient sequence homology with a mammalian myelin peptide such that the antibodies capable of binding to the microorganism are cross-reactive with mammalian myelin and demyelinate nervous tissue, wherein an elevated level of the antibodies in the subject as compared to a corresponding level of the antibodies in known unaffected subjects indicates multiple sclerosis in the subject.~~

41. [CANCELED] ~~The method of Claim 40, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus *Acinetobacter*.~~

42. ~~[CANCELED] The method of Claim 40, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus Agrobacter.~~

43. ~~[CANCELED] The method of Claim 40, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism classified within the genus Ruminococcus.~~

44. ~~[CANCELED] The method of Claim 40, wherein the bodily fluid is measured for the presence of antibodies capable of binding to a microorganism selected from the group consisting of Acinetobacter calcoaceticus, Agrobacter tumefaciens, and Ruminococcus albus.~~

45. ~~[CANCELED] The method of Claim 40, wherein the antibodies are measured using an enzyme-linked immunosorbent assay.~~

46. ~~[CANCELED] The method of Claim 45, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria classified within a genus selected from the group consisting of Acinetobacter, Agrobacter, and Ruminococcus.~~

47. ~~[CANCELED] The method of Claim 45, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria selected from the group consisting of Acinetobacter calcoaceticus, Agrobacter tumefaciens, and Ruminococcus albus.~~

48. ~~[CANCELED] The method of Claim 45, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole Acinetobacter calcoaceticus bacteria.~~

49. ~~[CANCELED] The method of Claim 45, wherein the enzyme-linked immunosorbent assay utilizes as a test antigen whole bacteria wherein the bacteria~~

~~contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.~~

50. [CANCELED] The method of Claim 40, wherein the antibodies are measured using an enzyme linked immunosorbent assay that utilizes as a test antigen a polypeptide selected from the group consisting of SEQ. ID. NOS: 1, 3, 4, and 5.

51. [CANCELED] The method of Claim 40, wherein the microorganism contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5.

52. [CANCELED] A kit for diagnosing spongiform encephalopathy in a mammalian subject, including a human subject, the kit comprising, in combination:  
a first vessel containing a microorganism classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and *Ruminococcus*; and  
instructions for use of the kit.

53. [CANCELED] The kit of Claim 52, wherein the first vessel is suitable for conducting enzyme linked immunosorbent assays therein and the microorganism is adhered to an inside surface of the vessel such that the microorganism is capable of reacting with antibodies in a solution added to the vessel.

54. [CANCELED] The kit of Claim 52, wherein the microorganism is selected from the group consisting of *Acinetobacter calcoaceticus*, *Agrobacter tumefaciens*, and *Ruminococcus albus*.

55. [CURRENTLY AMENDED] The kit of Claim 52, A kit for diagnosing spongiform encephalopathy in a mammalian subject, including a human subject, the kit comprising, in combination:  
a first vessel containing a microorganism classified within a genus selected from the group consisting of *Acinetobacter*, *Agrobacter*, and



Ruminococcus, wherein the microorganism contains an antigenic peptide comprising an amino acid sequence as shown in SEQ. ID. NOS: 1, 3, 4, and 5; and instructions for use of the kit.

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